

**Personal data:**

**Name:** Graham Harold Creasey

**Academic Qualifications:**

1970 - B.Sc. (Med.Sci.), University of Edinburgh, Scotland

1972 – M.B.Ch.B., University of Edinburgh, Scotland

1979 – F.R.C.S.Ed., Royal College of Surgeons of Edinburgh, Scotland

**Training:**

- 1972-73 - Surgery Internship, Bangour General Hospital, Edinburgh, Scotland
- 1973 - Medicine Internship, Western General Hospital, Edinburgh, Scotland
- 1973-74 - Demonstrator in Anatomy, Edinburgh Medical School, Edinburgh, Scotland
- 1974 - Temporary Scientific Staff, Medical Research Council, Clinical & Population Cytogenetics Unit, Edinburgh, Scotland, in preparation for:
- 1974-75 - Wellcome Research Fellowship  
Nairobi Research Centre, International Agency for Research in Cancer (W.H.O.)
- 1976 - Surgery Residency, Royal Infirmary of Edinburgh, Scotland
- 1976-77 - Surgery Residency, Leith Hospital, Edinburgh, Scotland  
Surgery Residency, Bangour General Hospital, Edinburgh, Scotland
- 1977-78 - Surgery Residency, Harare Hospital, Salisbury, Rhodesia
- 1979-80 - Surgery Residency, The Middlesex Hospital, London, UK
- 1980-86 - Senior Registrar in Spinal Paralysis, Spinal Injury Unit, Edenhall Hospital, Edinburgh, Scotland

**Professional Appointments:**

- 1986-89 - Senior Lecturer, Rehabilitation Studies Unit, Orthopedic Surgery Department, University of Edinburgh, Scotland
- 1986-89 - Attending Surgeon, Regional Spinal Cord Injury Unit, Edenhall Hospital, Edinburgh, Scotland
- 1990-93 - Principal Researcher, Applied Neural Control Laboratory, Case Western Reserve University, Cleveland, Ohio
- 1993-01 - Assistant Professor, Division of General Medical Sciences, Center for Physical Medicine and Rehabilitation, Case Western Reserve University, Cleveland, Ohio
- 1993-present - Attending Physician, Model Regional Spinal Cord Injury Unit, MetroHealth Medical Center, Cleveland, Ohio
- 1999-present - Research Physician, Louis Stokes VA Medical Center, Cleveland, Ohio
- 2001-present – Associate Professor, Dept. of Medicine, Case Western Reserve University, Cleve., OH

**Licensure & Certification:**

- 1972 - U.K. Medical License No. 1332340, General Medical Council
- 1979 - Specialty Certification (Surgery) F.R.C.S.Ed., Royal College of Surgeons of Edinburgh, Scotland
- 1986 - Sub-Specialty Accreditation (Spinal Injuries) Royal College of Surgeons of Edinburgh, Scotland
- 1988 - F.M.G.E.M.S., No. 177-565-9
- 1991 - E.C.F.M.G., Certificate No. 177-565-9
- 1991 - F.L.E.X., F.I.N.: 480326503
- 1992 - Resident Alien U.S. (Green Card, No.: A29432735)
- 1992 - Ohio Medical License No. 62955, Ohio State Medical Board
- 1993 - DEA Registration No. BC3896858
- 2000 - United States Citizen

**Honors and Awards:**

- 1966-72 - Anglo American Open Scholarship
- 1973-74 - Wellcome Traveling Fellowship
- 1983 - International Spinal Research Trust Traveling Fellowship
- 1985 - Winston Churchill Fellowship
- 1999-01 - Burroughs Wellcome Travel Fellowship
- 1999-02 - Advanced Research Career Development Award
- Veterans Affairs Rehabilitation Research and Development Service

**Professional Service:**

- 1984-86 - Biological Engineering Society of U.K., Secretary of Rehabilitation Engineering Group
- 1987-88 - Royal College of Surgeons of Edinburgh, Audio-Visual Committee
- 1986-90 - International Medical Society of Paraplegia, Editorial Board
- 1984-00 - International Medical Society of Paraplegia, Scientific Committee
- 1988-present- Group d'Etude Neuro-Urologique de la Langue Française
- 1992-present- American Spinal Injury Association, Neurological Classification Committee
- 1995-present- International Medical Society of Paraplegia, Editorial Board
- 2001- International Neuro-Urology Association, Executive Committee

Committees:

- 1995-96 - MetroHealth Medical Center: Division of Trauma, Critical Care, Burns & Metro Life Flight: Clinical Monitoring Committee
- 1996-98 - MetroHealth Center for Rehabilitation Research Committee (Chairman)
- 1996-present- Functional Electrical Stimulation (FES) Center, Member of Executive Committee

Study Sections:

- 1998-99 - NIH Special Emphasis Panel (SEP) on Urology
- 2001- - VA Merit Review

Grant Applications – Referee:

Medical Research Council of UK  
Science and Engineering Research Council, UK  
Spinal Cord Research Foundation, PVA  
National Institutes of Health  
Veterans Administration

Journal Articles – Referee:

Paraplegia/Spinal Cord  
Prosthetics and Orthotics  
IEEE Transactions in Biomedical Engineering  
IEEE Transactions in Rehabilitation Engineering

**Thesis Advisor:**

Student: Christopher Kirtley, M.D.  
Degree: Ph.D., Bioengineering, University of Strathclyde  
Date: 1989  
Title: “Control of Functional Stimulation with Extended Physiological Proprioception”  
Present Position:

Student: James M. Martau  
Degree: M.S., Biomedical Engineering, CWRU  
Date: 1991  
Title: “Evaluation of the Efficacy and Safety of Chronic Electrical Block of the Pudendal Nerve”  
Present Position: In medical practice

Student: Anurag Bhargava, M.D.  
Degree: M.S. Biomedical Engineering, CWRU  
Date: 1993  
Title: “Long Term Effects of Quasi-Trapezoidal Pulses on the Structure and Function of Sacral Anterior Roots”  
Present Position: Employee of Guidant Corporation, Brussels, Belgium

Student: Luigi DiBattista, D.D.S.  
Degree: M.S., Dentistry, CWRU  
Date: 1994  
Title: “Electrical Stimulation of the Masseter Muscle”  
Present Position: In orthodontic practice in Montreal, Canada

Student: Rafael Carbunaru, M.S.  
Degree: Ph.D., Biomedical Engineering, CWRU  
Date: 1999  
Title: "Coil Designs for Localized and Efficient Magnetic Stimulation of the Nervous System"  
Present Position: Employee of Advanced Bionics Corporation, California

Student: Narendra Bhadra, M.D.  
Degree: Ph.D., Biomedical Engineering, CWRU  
Date: 2001  
Title:  
Present Position: Completing Ph.D.

**Post-Doctoral Research Supervision:**

Advisee: Alison J. Douglas, Ph.D.  
Position: Post-Doctoral Research Fellow, Dept. of Physiology, University of Edinburgh  
Dates: 1986-89  
Title: "Electrical Stimulation of Paralyzed Muscle and its Effects on Spasticity and Skin Blood Flow"

Advisee: Peter Philips, Ph.D.  
Position: Post-Doctoral Research Fellow, Dept. of Physiology, University of Edinburgh  
Dates: 1986-89  
Title: "Electrical Stimulation of Paralyzed Muscle in the Tetraplegic Upper Limb"

Advisee: Younghee Lee, M.D., Ph.D.  
Position: Associate Professor, Department of Rehabilitation Medicine, Yonsei University, Korea  
Dates: 1999-2000  
Subject: Neuromodulation for Continence after Spinal Cord Injury  
Present Position: Professor and Chairman, Dept. of Physical Medicine & Rehabilitation, Seoul, Korea

**Instructional Courses:**

May, 1995 - Female Bladder Functional Restoration by Electrical Stimulation, American Spinal Cord Injury Association, Orlando Florida  
Apr., 1996 - Evaluation of Electrical Stimulation of the Bladder, American Spinal Cord Injury Association, Seattle, Washington  
Nov., 1997 - Bladder, Bowel and Sexual Function. American Academy of Physical Medicine and Rehabilitation. Atlanta, GA  
Feb., 1998 - Interactive Multimedia Training in Spinal Cord Injury. International Medical Society Of Paraplegia. Australasian Regional Scientific Meeting. Adelaide, Australia  
Apr., 1998 - Practical Systems for Bladder and Bowel Function, American Spinal Injury Association, Cleveland, Ohio

- July, 1998 - Restoring Bladder, Bowel and Sexual Function after Spinal Cord Injury. Rehabilitation Engineering Society of North America. Minneapolis, Minnesota
- Sep., 1998 - (Organizer of Symposium) Electrical Control of Bladder Bowel and Sexual Function. American Paraplegia Society, Las Vegas, NV
- June, 1999 - Workshop Co-Chair: Bowel Management. 38<sup>th</sup> Annual Scientific Meeting of International Medical Society of Paraplegia (IMSOP) in association with Nordic Medical Society of Paraplegia, Copenhagen, Denmark
- June, 1999 - Workshop Co-Chair: Urinary Incontinence. 38<sup>th</sup> Annual Meeting of International Medical Society of Paraplegia in association with Nordic Medical Society of Paraplegia, Copenhagen, Denmark
- Sept., 1999 - Symposium Chair: Restoring Limb and Bladder Function with Electrical Stimulation. American Paraplegia Society, Las Vegas, NV
- June, 2000 - Symposium Co-Chair, Clinical Neural Prostheses after 2000. Neural Prosthesis Workshop, Tversted, Denmark
- Oct., 2000 - Workshop on Electrical Stimulation, International Medical Society of Paraplegia, Sydney, Australia
- Nov., 2000 - Course on Functional Electrical Stimulation for SCI Rehabilitation, American Academy of PM&R, San Francisco, CA.

**Conferences:****Principal Organizer:**

- Oct., 1984 - Conference on "Functional Electrical Stimulation" on behalf of the International Spinal Research Trust, London, UK
- July, 1987 - Symposium on "Understanding the Incontinent Bladder and Bowel" on behalf of the Biological Engineering Society, Edinburgh, Scotland
- Jan., 1989 - Conference on "Electrical Stimulation of Muscle," on behalf of the Biological Engineering Society, Durham
- Mar., 1989 - Conference on "Nutrition following Spinal Cord Injury," Edinburgh, Scotland

**Conferences-Continued:****Assistant Organizer:**

- Sept., 1985 - Annual Scientific Meeting of the International Medical Society of Paraplegia, Edinburgh, Scotland
- Sept., 1987 - Conference on "Advanced Rehabilitation Technology," on behalf of the Biological Engineering Society, Oxford, UK
- Aug., 1988 - World Conference on Medical Education, on behalf of World Federation for Medical Education, Edinburgh, Scotland
- July, 1994 - Motor Neural Prostheses, on behalf of Engineering Foundation, New York in Deer Creek, Ohio
- May, 1996 - Electrical Control of the Bladder, on behalf of International Medical Society of Paraplegia, Innsbruck, Austria
- Aug., 1997 - Motor Neural Prostheses '97 and 2<sup>nd</sup> Annual Conference of International FES Society, Vancouver, BC
- Apr., 1998 - American Spinal Injury Association Annual Conference, Cleveland, Ohio
- June, 2000 - Motor Neural Prostheses 2000, Aalborg, Denmark

**Invited Lectures:**

- May, 1984 - Rehabilitation and Modern Technology, King's Fund Conference on "Rehabilitation : The Present and the Future," London, UK
- Sept., 1984 - Aids for Communication and Computer Access, U.K. Government Department of Trade and Industry Conference on "Concerned Technology in Education," Edinburgh, Scotland
- Sept., 1985 - Orthotics and Bioengineering, British Council Course on Spinal Injuries, Stoke Mandeville Hospital, UK
- Dec., 1985 - Appropriate Technology following Spinal Cord Injury, Department of Physical Medicine & Rehabilitation, Santa Clara Valley Medical Center, San Jose, California, USA
- Mar., 1986 - The Restoration of Function following Spinal Injury Spinal Injury Unit, Cleveland Metropolitan General Hospital, Cleveland, Ohio
- Mar., 1986 - Alberta Heritage Fund Visiting Lecturer, Calgary and Edmonton, Canada
- Apr., 1987 - Clinical Applications of Functional Electrical Stimulation, National Centre for Training and Education in Prosthetics and Orthotics, Strathclyde, U.K.
- Oct., 1987 - Visiting Lecturer at Centre de Readaptation, Mulhouse, France
- Nov., 1988 - Visiting Lecturer at Centre de Readaptation, Mulhouse, France
- Nov., 1988 - Le Controle Electrique de l'Appareil Urinaire, Groupe d'Etude Neuro-Urologique de la Langue Française, Paris, France
- Mar., 1989 - Functional Electrical Stimulation, Chief Scientist's Office, Scottish Home and Health Department, Edinburgh, Scotland
- July, 1990 - Restoration of Bladder & Bowel Function by Stimulation of Spinal Nerve Roots, Neural Prosthesis Lecture, W.O. Walker Rehabilitation Centre, Cleveland, Ohio
- July, 1991 - Control of Diaphragm, Bladder, Bowel and Limb Muscle, Department of Functional Restoration, Stanford University Medical Center, California
- May, 1992 - Selective Activation of Bladder, Bowel and Sexual Function, Applied Neural Control Research Day, Cleveland, Ohio, USA
- Jan., 1993 - Restoration of Function by Electrical Stimulation, National Rehabilitation Hospital, Washington, DC
- May, 1994 - New Technology and Future Directions, Conference on the Health of Women in Physical Disabilities, National Institutes of Health, Washington, DC
- June, 1994 - Selective Electrical Activation of the Bladder, Fourth European Urological Summer Forum, Vaals, The Netherlands
- Feb., 1995 - Neuroprosthetic Control of the Bladder and Bowel, PVA Board of Directors, Miami, Florida
- Mar., 1995 - Functional Electrical Stimulation in Spinal Cord Injury, Spinal Cord Injury Unit, Christchurch, New Zealand
- Mar., 1995 - Spinal Cord Injury Rehabilitation in the 21<sup>st</sup> Century, International Federation of Physical Medicine and Rehabilitation, 12<sup>th</sup> World Congress, Sydney, Australia
- Apr., 1995 - Current Applications and Future Directions for FES in Spinal Cord Injury, International Medical Society of Paraplegia, Australasian Branch, Sydney, Australia
- Feb., 1996 - Indications and Procedures for Electrical Control of the Bladder, International Medical Society of Paraplegia, Australasian Branch, Christchurch, New Zealand
- Feb., 1996 - Restoration of Function after SCI: Past, Present and Future, Australasian Spinal Research Trust Conference on Regeneration, Melbourne, Australia

- July, 1996 - Control of Bladder, Bowel and Sexual Function by Electrical Stimulation, Japan FES Society, Akita, Japan
- Aug., 1997 - North American Program for Bladder & Bowel Control by Electrical Stimulation, Glenrose Rehabilitation Hospital, Edmonton, Alberta, Canada
- Dec., 1997 - Restoration of Function by Electrical Stimulation. Seventh International Symposium on Neural Regeneration, Asilomar, California
- Feb., 1998 - Improvement of Function using Electrical Stimulation after Spinal Cord Injury. Royal Adelaide Hospital, Australia
- May, 1998 - Clinical Results and Future Prospects in Bladder, Bowel and Sexual Function. Applied Neural Control Research Day, Cleveland, Ohio
- Feb., 1999 - The Bladder in Multiple Sclerosis: Prospects for Electrical Control. Veterans Administration Conference on Multiple Sclerosis., Phoenix, AZ
- Apr., 1999- Sexual, Bowel and Bladder Dysfunction: Electrophysiological Elimination of Embarrassment. 2<sup>nd</sup> World Congress on Neuro Rehabilitation, Toronto, Ontario, Canada
- Apr., 1999- Restoration of Bladder Function in Spinal Cord Injury using Functional Electrical Stimulation. 2<sup>nd</sup> World Congress on Neuro Rehabilitation, Toronto, Ontario, Canada
- June, 1999- VA Annual Rehabilitation Symposium, Panel Participant, RR&D Centers of Excellence: Relevance to Clinical Practice, Houston, TX
- Nov., 1999- Limitations of present functional electrical stimulation (FES) technology. 13<sup>th</sup> Annual Johnson & Johnson Focused giving Scientific Symposium, New Brunswick, NJ
- Dec., 1999- Implantation of bladder stimulator in children and adolescents. The Howard H. Steel Conference on Pediatric Spinal Cord Injury, Palm Springs, CA
- Feb., 2000 - Restoration of Bladder and Bowel Function Using Electrical Stimulation after Spinal Cord Injury. 2<sup>nd</sup> National Rehab R & D Conference, VA Medical Center, Washington, DC
- April, 2000 – Neural Control of Bladder and Bowel Function. 7<sup>th</sup> Annual Meeting of The American Society of Neuro Rehabilitation, San Diego, CA
- June, 2000 – Bowel Control and Sexual Function. Spinal Injury: New Horizons Conference; Putting the Science into Rehabilitation, London, England
- June, 2000 – Bladder and Bowel Management with Functional Electrical Stimulation, Sixth Annual Kentucky Spinal Cord and Head Injury Research Symposium, Lexington, KY
- June, 2000 – Invited participant in NINDS Workshop at UCLA, Los Angeles, CA on Spinal Circuitry & Neural Prostheses.
- Sept., 2000- Improving Quality of Life for Persons with Neurogenic Bladder and Bowel using Assistive Technology, Annual Meeting of the American Association of Spinal Cord Injury Nurses, Las Vegas, NV
- Sept., 2000 – Restoration of Male Sexual Function Following Spinal Cord Injury. 2<sup>nd</sup> Annual Meeting, Society for the Study of Impotence, Inc., Cleveland, OH
- Nov., 2000- Size Selective Neural Stimulation. 14<sup>th</sup> Annual Johnson & Johnson Focused Giving Scientific Symposium, New Brunswick, NJ
- June, 2001- Sacral Nerve Stimulation for Bowel and Bladder Control, Conference on “Neuromodulation: Defining the Future,” Cleveland Clinic Foundation, Cleveland, OH
- Nov., 2001- Restoring Bladder, Bowel & Sexual Function by Electrical Stimulation after Spinal Cord Injury, Washington University School of Medicine, St. Louis, MO

**Teaching Activities:**

Medical Students

Edinburgh University  
Case Western Reserve University

Residents

Edinburgh  
Cleveland

Postgraduate specialty lectures

Edinburgh University  
Edinburgh Postgraduate Board for Medicine  
Royal College of Surgeons of Edinburgh  
Rehabilitation Studies Unit, University of Edinburgh

Nurses

South Lothian College of Nursing, Scotland  
North Lothian College of Nursing, Scotland

Therapists

Queen Margaret College, Edinburgh  
Dunfermline College of Physical Education, Scotland

Clinical staff, patients and relatives

Edenhall Spinal Unit, Scotland  
Northeast Ohio Regional Spinal Cord Injury System

Training courses and surgeries for bladder and bowel stimulation implants

Cleveland – MetroHealth Medical Center, VAMC  
New York - Mt Sinai Medical Center, Bronx VAMC  
San Diego - UCSD, VAMC  
Seattle - University of Washington Medical Center  
Stanford University Medical Center  
Denver - Craig Hospital  
Philadelphia – Shriner’s Hospital for Children  
Charlotte - Carolinas Medical Center  
Minneapolis – Abbott Northwestern Medical Center  
Chicago – Hines VAMC  
Louisville – Jewish Hospital and Indiana Rehab Center  
Montreal – Jewish Hospital  
Stockholm – Karolinska Hospital

Training courses without surgeries for bladder and bowel implants

New Haven, CT – University Hospital & Gaylord Rehabilitation Hospital  
Atlanta, GA – Shepherd Spinal Center  
Los Angeles, CA – Loma Linda University, USC, Northridge, Casa Colinas,  
Rancho los Amigos Hospitals  
Salt Lake City, UT – University Hospital



**Public Education:**

Advisor to BBC Radio and Television and Scottish Television about the presentation of paraplegia in broadcasting. A film in functional electrical stimulation made jointly with the BBC is shown regularly on BBC Schools Television. Took part in the production of a film on First Aid for spinal injuries. Further programs on medical research were made with Scottish Television in 1989. Bladder and bowel research featured on PBS television and other national networks in USA.

**Patents:**

## Micturitional Assist Device

Fang, Z., Mortimer, J.T. & Creasey, G.H.

U.S. Patent No. 5,199,430 Granted April 6, 1993

## Thin Film Implantable Electrode and Method of Manufacture

Grill, W.M., Creasey, G.H., Ksienski, D.A., Veraart, C.S., and Mortimer, J.T.

U.S. Patent No. 5,324,322 Granted June 28, 1994

**Active Research Support:****Source of support:**

VA Department of Veterans Affairs, #B97-1244HA

Merit Review Application

## Project title:

“Electrical Control of Bowel and Bladder in Spinal Cord Injury Patients”

## Role in project:

Co-Principal Investigator

## Percentage of appointment:

-0- (\*See Advanced Research Career Development Award)

## Dates of entire project period:

1 April 1998 through 31 December, 2001

## Total direct costs:

\$829,200

## Brief description of project:

This project is evaluating an implanted electrical stimulator for its ability to improve bowel and bladder function in spinal cord injury patients. Dr. Creasey’s work on this project is funded separately through an Advanced Research Career Development Award from the Veteran’s Administration.

**Source of support:**

Department of Veterans Affairs, Veterans Health Administration, #B0909CD

Advanced Rehabilitation Research Career Development Award

## Project title:

“Electrical Control of Bowel and Bladder in Spinal Cord Injury”

## Role in project:

Principal Investigator

## Percentage appointment:

40 hrs./week

## Dates of entire project period:

28 February 1999 through 27 February 2002

## Total direct costs:

\$106,210

## Brief description of project:

This award supports the salary of Dr. Creasey for three years for Research Career Development. During this time he will work on the Merit Review Application described above and will collaborate with researchers in the UK.

**Source of support:** Burroughs Wellcome Fund, Research Travel Grant  
**Project title:** "Development of the Sacral Anterior Root Stimulation Implant (SARSI) for Bladder and Bowel Control"  
**Role in project:** Principal Investigator  
**Percentage appointment:** 0% (travel & subsistence only)  
**Dates of entire project period:** Through 2001  
**Total direct costs:** \$12,695  
**Brief description of project:** The purpose of this grant is to support travel and subsistence while Dr. Creasey collaborates with researchers in the UK during the tenure of his Advanced Research Career Development Award.

**Source of support:** Johnson & Johnson Focused Giving Program  
**Project title:** "Size-Selective Neural Stimulation"  
**Role in project:** Co-Investigator  
**Percentage appointment:** 5%  
**Dates of entire project period:** 1 July 1998 through 30 June 2001  
**Total direct costs:** \$160,000  
**Brief description of project:** The purpose of this grant is to conduct animal research and computer modeling to improve stimulus waveforms and electrode designs for selective activation of nerves.

**Source of support:** National Institutes of Health  
**Project title:** "Neural Prosthetic Control of Continence and Micturition"  
**Role in project:** Co-Investigator  
**Percentage of appointment:** 5%  
**Dates of entire project period:** July 1, 2001 through June 30, 2004  
**Total direct costs:** \$375,000  
**Brief description of project:** This project is designed to study the inhibition of reflex bladder contraction in acute animal experiments.

**Source of support:** National Institutes of Health (KJG PI)  
**Project title:** Career Development in Bladder Control Neural Prostheses  
**Role in project:** Mentor  
**Percentage of appointment:** 5% (not paid)  
**Dates of entire project period:** 04/01/01 through 03/30/06  
**Total direct costs:** \$473,071  
**Brief description of project:** This project is a collaboration on animal and human neuro-urology in which Dr. Creasey will act as a mentor to the Principal Investigator.

**Past Research Support:**

**Source of support:** National Institute on Disability and Rehabilitation Research NIDRR  
**Project title:** "Northeast Ohio Model Spinal Cord Injury System"  
**Role in project:** Co-Investigator  
**Percentage appointment:** 5%  
**Dates of entire project period:** 1 July 1995 through 30 June 2000  
**Total direct costs:** \$1,900,000  
**Brief description:** This project funds the regional model spinal cord injury system in NE Ohio to collect demographic data on spinal cord injury and to carry out specific research projects. Dr. Creasey takes part in one of these projects on bowel function.

**Source of support:** National Institute on Disability and Rehabilitation Research NIDRR- U.S. Dept. of Education, Grant No. H133G50067  
**Project title:** "Pressure Ulcer Prevention with Interactive Learning"  
**Role in project:** Project Director (PI)  
**Percentage appointment:** 5%  
**Dates of entire project period:** 1 July 1995 through 30 June 1998  
 Approved for a one year no cost extension  
 Through 30 June 1999  
**Total direct costs:** \$467,517  
**Brief description:** Project is designed to develop interactive CD-ROM teaching programs for prevention of pressure ulcers, building on a collected foundation of traditional material, emphasizing change of behavior primarily for spinal cord injury patients.

**Source of support:** National Institutes of Health  
**Project title:** Localization of Magnetic Field for Neuronal Excitation  
**Role in project:** Co-Investigator  
**Dates of entire Project period:** 1 July 1994 through 30 June 1998 (4 years)  
**Total direct costs:** \$834,612

**Source of support:** Veterans Administration  
**Project title:** Neuroprosthetic Control of Bladder and Bowel in Spinal Injury Patients  
**Role in project:** Co-Principal Investigator  
**Dates of entire Project period:** 1 July 1994 through 30 June 1997 ( 3 years)  
**Total direct costs:** \$455,000

**Source of support:** National Institutes of Health  
Project title: An Electrical Device for Assisting Bowel Function  
Role in project: Principal Investigator  
Dates of entire  
Project period: 1 July 1994 through 31 January 1995 (6 months)  
Total direct costs: \$50,000

**Source of support:** Spinal Cord Research Foundation (PVA)  
Project title: Electrically Activated Defecation and Micturition  
Role in project: Co-Investigator  
Dates of entire  
Project period: 1 July 1994 through 30 June 1995 (1 year)  
Total direct costs: \$43,249

**Source of support:** Spinal Cord Research Foundation (PVA)  
Project title: Neuroprosthetic Control of Bladder and Bowel Function in Spinal Injury Patients  
Role in project: Co-Investigator  
Dates of entire  
Project period: 1 July 1993 through 30 June 1995 (2 years)  
Total direct costs: \$83,664

**Source of support:** National Institutes of Health (NCMRR)  
Project title: Bladder and Bowel Control using Neuroprosthetic Devices  
Role in project: Co-Investigator  
Dates of entire  
Project period: 1 July 1993 through 30 June 1995 (2 years)  
Total direct costs: \$128,734

**Source of support:** Veterans Administration  
Project title: Neuroprosthetic Control of Bladder & Bowel in Spinal Cord Injury  
Role in project: Co-Investigator  
Dates of entire  
Project period: 1 October 1992 through 30 September 1993 (1 year)  
Total direct costs: \$50,000

**Source of support:** Edison BioTechnology Center  
Project title: Electrical Control of Bladder and Sphincters  
Role in project: Co-Investigator  
Dates of entire  
Project period: 1 March 1991 through 30 June 1992 (15 months)  
Total direct costs: \$164,478

**Source of support:** Lothian Health Board, Scotland  
**Project title:** The Control of the Environment using Shoulder Movement  
**Role in project:** Principal Investigator  
**Dates of entire**  
**Project period:** 1 May 1989 through 30 November 1989 (6 months)  
**Total direct costs:** £2,000

**Source of support:** Leverhulme Trust  
**Project title:** Nutrition Following Spinal Cord Injury  
**Role in project:** Principal Investigator  
**Dates of entire**  
**Project period:** 11 June 1988 through 11 December 1988 (6 months)  
**Total direct costs:** £2,000

**Source of support:** Scottish Home and Health Department  
**Project title:** Electrical Stimulation of Paralyzed Muscle  
**Role in project:** Co-Investigator  
**Dates of entire**  
**Project period:** 1 March 1986 through 28 February 1989 (3 years)  
**Total direct costs:** £85,000

**Source of support:** Scottish Home and Health Department  
**Project title:** Matching of Computers and Interfaces to the Needs of Tetraplegic Patients  
**Role in project:** Co-Investigator  
**Dates of entire**  
**Project period:** 1 March 1985 through 28 February 1987 (2 years)  
**Total direct costs:** £50,000

## Bibliography:

### Journal Articles:

1. Steel CM, **Creasey GH**. A micro-method for the activation of human blood lymphocytes in vitro. Immunological Communications 1976; 5,(7 & 8): 669-684
2. Cochrane J, Beacon J, **Creasey GH**, Russell R.C.G.R. Wound healing after laser surgery: an experimental study. Brit J Surg 1980; 67(10): 740-743
3. Varma JS, Binnie N, Smith AN, **Creasey GH**, Edmond P. Differential effects of sacral anterior root stimulation on anal sphincter and colorectal motility in spinally injured man. Brit J Surg 1986;73:478-482
4. Workman DS, Geggie C, **Creasey GH**. The microcomputer as an aid to written communication. Brit J Occ Ther 1988; 51(6):188-190

5. Binnie N.R, **Creasey GH**, Edmond P, Smith AN. The action of cisapride on the chronic constipation of paraplegia. *Paraplegia* 1988; 26(3):151-158
6. **Creasey GH**. Functional electrical stimulation in quadriplegia. *Seminars in Orthopaedics* 1989; 4(1): 55-63
7. Binnie NR, Smith AN, **Creasey GH**, Edmond P. Motility effects of electrical anterior sacral nerve root stimulation of the parasympathetic supply of the left colon and anorectum in paraplegic subjects. *J Gastrointestinal Motility* 1990; 2(1):12-17
8. Douglas AJ, Walsh EG, Wright GW, **Creasey GH**, Edmond P. The effects of neuromuscular stimulation on muscle tone at the knee in paraplegia. *Experimental Physiology* 1991;76:357-367
9. Lucas MG, Hargreave TB, Edmond P, **Creasey GH**, McParland M, Seager SW. Sperm retrieval by electro-ejaculation. *British Journal of Urology* 1991; 67(2) 191-194
10. Binnie NR, Smith AN, **Creasey GH**, Edmond P. The effects of electrical anterior sacral nerve root stimulation on pelvic floor function in paraplegic subjects. *J Gastrointestinal Motility* 1991; 3(1):39-45
11. Binnie NR, Smith AN, **Creasey GH**, Edmond P. Constipation associated with chronic spinal cord injury; the effect of pelvic parasympathetic stimulation by the Brindley stimulator. *Paraplegia* 1991; 29:463-469
12. Peckham PH, **Creasey GH**. Neural prostheses: clinical applications of functional electrical stimulation in spinal cord injury. *Paraplegia* 1992; 30:96-101
13. **Creasey GH**. Sacral root electrical stimulation for micturition after spinal cord injury. *Urology Clinics of North America*, 20(3):505-515, 1993
14. Banwell JG, **Creasey GH**, Aggarwal AM, Bodner DR, Mortimer JT. Management of the neurogenic bowel in patients with spinal cord injury. *Urology Clinics of North America*, 20(3)517-526, 1993
15. Ditunno JF, Young W, Donovan W, **Creasey GH**. The International Standards Booklet for Neurological and Functional Classification of Spinal Cord Injury. *Paraplegia* 32:70-80, 1994
16. **Creasey GH**, Bodner DR. Review of electrical stimulation in the management of the neurogenic bladder. *Neurorehabilitation* 4(4): 266-274, 1994
17. Agnew WF, Horch K, Mortimer JT, Citron P, **Creasey GH**, Cantor, C. Perspectives on new electrode technology for stimulating peripheral nerves with implantable motor prostheses. *IEEE Trans Rehab Eng* 3(2):1-10, 1995

18. Wipfler G, Grunewald V, Bhadra N, **Creasey GH**, Mortimer JT. Sacral root stimulation for selective activation of the canine bladder using quasitrapezoidal pulses. *Akt. Urol.* 26, 13-15, 1995
19. **Creasey GH**, Elefteriades J, DiMarco A, Talonen P, Bijak M, Girsch W, Kantor C. Electrical stimulation to restore respiration. *J. Rehab Research & Development*, 33(2), 123-132, 1996
20. Keith MW, Kilgore KL, Peckham PH, Wuolle KS, **Creasey GH**, Lemay M. Tendon transfers and functional electrical stimulation for restoration of hand function in spinal cord injury. *Journal of Hand Surgery - American Volume.* 21(1):89-99, 1996
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